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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,856	12/26/2001	Dairi Kubo	216376US0PCT	8457

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EXAMINER

FELTON, AILEEN BAKER

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,856

Applicant(s)

KUBO ET AL.

Examiner

Aileen B Felton

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,8-16,20,21,24-26 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) 8-10,12-16,20,21,24,28 and 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,11,25,26 and 29-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restrictions

1. Applicant's election with traverse of the groups and species in Paper No.'s 11 and 13 is acknowledged. The traversal is on the ground(s) that the groups and species do not lack a special technical feature. This is not found persuasive because the groups and species do lack a special technical feature as shown by US 5,756,929 to Lundstrom and US 6,033,500 to Ito et al.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 8-10, 12-16, 20, 21, 24, 28, and 36-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species and groups, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No.'s 11 and 13. Applicant has indicated that claims 8-10, 12, 13, 21, 24, and 28 read on the elected species. The examiner does not agree. Applicant has elected a cellulose additive and these claims include additives other than a cellulose additive.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 25, 29-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundstrom(5,756,929) in view of Ito et al(6,033,500).

Lundstrom et al discloses compositions that comprise between 9.53-16.47 of 5-aminotetrazole, 11.82-39 % of guanidine nitrate, 51.47-60.57 of strontium nitrate, and additives such as nitroguanidine (see col. 5, Tables 1 and 2). Lundstrom et al also discloses that the components are dry blended and compacted (pressed) with compounding aids (binders) (see col. 4, lines 19-30). Lundstrom discloses the use of mixtures of oxidizers including both strontium nitrate and potassium nitrate (col. 9, lines 25-46). However, Lundstrom does not disclose the particle size of the guanidine nitrate or the amount of potassium nitrate that is used.

Ito et al teaches the use of 50% average particle diameter of the tetrazole group to be 5-80 μm (col. 9, lines 9-25). In col. 8, lines 43-50, Ito teaches that the tetrazole group includes guanidine and salts.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the teaching of particle size with the composition of Lundstrom since Ito is using the small particle size with guanidine nitrate which is the same fuel used by Lundstrom and also since Ito suggests that a preferred combustion velocity is obtained by using fuel particles in this size range. It would also have been obvious to use mixtures of oxidizers since Lundstrom suggests that mixtures can be used and to vary the amounts of the oxidizers used in order to optimize the performance of the gas generating composition. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

5. Claims 11, 26, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundstrom(5,756,929) in view of Ito et al(6,033,500) as applied to claims 1, 2, 25, 29-32, and 35 above, and further in view of Hinshaw et al(6,039,820).

Lundstrom and Ito fail to teach or disclose a cellulose or natural polymer binder, the extrusion of the gas generating composition and the use of basic copper nitrate.

Hinshaw et al teaches a gas generating composition with guanidine nitrate that includes the use of modified cellulose and gum binders (natural polymers) as well as the use of basic copper nitrate as a co-oxidizer in the amount of 10-60 %.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use binders as taught by Hinshaw with the composition of Lundstrom since Lundstrom suggests that binders can be used and since Hinshaw teaches that the cellulose and gum binders are known binders for use with gas generating composition. It would also have been obvious to use the basic copper nitrate since both Lundstrom and Hinshaw suggest that multiple oxidizers can be used to obtain different results in terms of ballistic properties or slag formation.

Response to Arguments

6. In response to Applicant's arguments regarding Lundstrom, the new teaching of Ito et al meets the claimed particle size in claim 1. The comparative example does not apply to this new combination of references. Applicant also argues that Ito et al does not disclose the claimed particle size, but this is clearly not the case; see col. 9, lines 9-25 and col. 8, lines 43-50.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen Felton whose telephone number is (703) 306-5751. The examiner can normally be reached on Monday through Friday from 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687. The fax number for submissions before a final action is (703) 872-9326, for after final submissions is (703) 872-9327, and customer service is (703) 872-9325.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Aileen B. Felton
Aileen B. Felton